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**Matrix  $A_p$  weights, degenerate Sobolev spaces, and mappings of finite distortion.**

**Abstract**

We study degenerate Sobolev spaces where the degeneracy is controlled by a matrix  $A_p$  weight. We prove that the classical Meyers-Serrin theorem,  $H = W$ , holds in this setting. As applications we prove partial regularity results for weak solutions of degenerate  $p$ -Laplacian equations, and in particular for mappings of finite distortion.

Talk time: 07/22/2016 4:00PM— 07/22/2016 4:20PM  
Talk location: Crow 204

Special Session: Harmonic analysis. Organized by K. Bickel.